



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant: CONRAD MIKULEC .

Examiner: Barney, Seth E.

Serial No.: 10/707,452

Group Art Unit: 3752

Filed: December 15, 2003

For: ACTUATOR FOR FIRE EXTINGUISHER

The Commissioner of Patents
and Trademarks
Alexandria, VA 22313

BRIEF OF APPELLANT

Sir:

This is an appeal from the Final Rejection of the Examiner, dated August 9, 2005, rejecting Claims 1 to 6 and 8 to 21.

(1) Real Party In Interest

The real party in interest is the inventor, Conrad Mikulec.

(2) Related Appeals and Interferences

There are no related appeals or interferences.

(3) Status of Claims

Claims 1 to 21 are pending.

Claims 1 to 6 and 8 to 21 were rejected and are appealed.

Claims 7 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

10/19/2005 HDESTA1 00000077 10707452

01 FC:1402

500.00 8P

10/20/2005 HDESTA1 00000054 10707452

02 FC:2402

250.00 0P

(4) Status of Amendments

No amendment was filed after the second Final Rejection.

(5) Summary of Claimed Subject Matter

The independent claims are Claims 1, 17, and 20.

Claim 1

This claim is directed to an actuator for releasing a fire extinguishing composition that is stored under pressure in the cylinder of a fire extinguisher. The actuator comprises an elongated body made of a single piece (Paragraphs [0014] and [00150, Figures 3, 4, and 5, number 21). The body has (1) a longitudinal chamber (Paragraph [0015], Figures 3, 4, and 5, number 22) that extends through the body, for holding a ram (Paragraph [0015], Figure 2, number 24) that moves therein and a spring (Paragraph [0015], Figure 2, number 23) for propelling the ram; (2) a first transverse aperture (Paragraph [0015], Figures 2, 3, and 4, number 25) that joins the chamber, for holding a trigger (Paragraph [0015], Figure 2, number 18) that releases the spring; and (3) a second transverse aperture (Paragraph [0015], Figures 2, 3, and 4, number 26) that joins the chamber, for holding a member (Paragraph [0016], Figure 2, number 27) that moves in response to movement of the ram. The movement of the member activates the release of the composition from the cylinder (Paragraph [0016]).

Claim 17

Claim 17 includes all of the elements of Claim 1, but also explicitly requires the presence of the member, the ram, the compressed spring, and the trigger, that are mentioned in Claim 1.

Claim 20

Claim 20 incorporates the same elements as Claim 17, but also a fusible link (Paragraphs [0012] and [0018], Figure 1, number 8).

Claim 4 is separately argued.

Claim 4

Claim 4 depends from Claim 1 but also requires a microswitch or a cable that is activated by said ram to be attached at each end of the chamber (paragraph [0017], Figure 6, numbers 35 and 36).

(6) Grounds of Rejection to be Reviewed on Appeal

- I. Claims 1 to 6, 8, 9, 14, 15, 17, and 19 were rejected under 35 U.S.C. 102(b) as anticipated by Mikulec '572.
- II. Claims 10 to 13, 16, 20, and 21 were rejected as unpatentable under 35 U.S.C. 103(a) over Mikulec '572.

(7) Argument

- I. Claims 1 to 6, 8, 9, 14, 15, 17, 18, and 19 were rejected under 35 U.S.C. 102(b) as anticipated by Mikulec '572. The Examiner asserts that Mikulec '572 "discloses a fire extinguishing actuator having: -an elongate body made of single piece (not expressly numbered). See Figure 3." Appellant does not agree.

Figure 3 in Mikulec '572 shows that the body of the actuator is made of at least three pieces. The patent identifies two distinct pieces, header 26 and casing 120, but Figure 3 clearly shows that header 26 comprises two tubes, one inside the other. Note that the hatch marks on the inside tube slant to the left while the hatch marks on the outside tube slant to the right. Thus, there are at

least three pieces, namely casing 120 and the two tubes that comprise header 26.

As Appellant explained in paragraph [0002] of his specification, in the Mikulec '572 patent, of which he is also the inventor, various parts "are attached to the tubes. Several of those parts were attached by welding them to the tubes. Misalignments sometimes occurred, resulting in defective actuators that had to be discarded." Note in Figure 3 of Mikulec '572 that casing 120 is attached to one of the tubes by means of screw 122 (see column 4, lines 23 and 24, of Mikulec '572).

By using a body for the actuator that is a single piece, which is much thicker than the tubes used in Mikulec '572, then "drilling, machining, and threading" (paragraph [0014, lines 8 and 9) that single piece, Appellant was able to eliminate the necessity of attaching various other parts to the tubes. Since the "drilling, machining, and threading" could be performed much more precisely than welding and screwing a casing onto a tube, Appellant was able to overcome the problem of misalignment of attached parts, which resulting in discarding defective actuators.

There is nothing in Mikulec '572 that discloses or suggests that the actuator could be made from a single piece or that it might be desirable to make it from a single piece, nor is there any suggestion as to how it might be possible to make it out of a single piece. Indeed, it was only after making and testing a number of Mikulec '572 actuators that Appellant even became aware of the problem. Appellant is certainly an expert in this art and had it been obvious to him that these problems would arise, he would not have made and sold the Mikulec '572 actuator.

Claim 4 requires a microswitch or a cable that is activated by the ram to be attached at each end of the chamber. The actuator in Mikulec '572 shows a

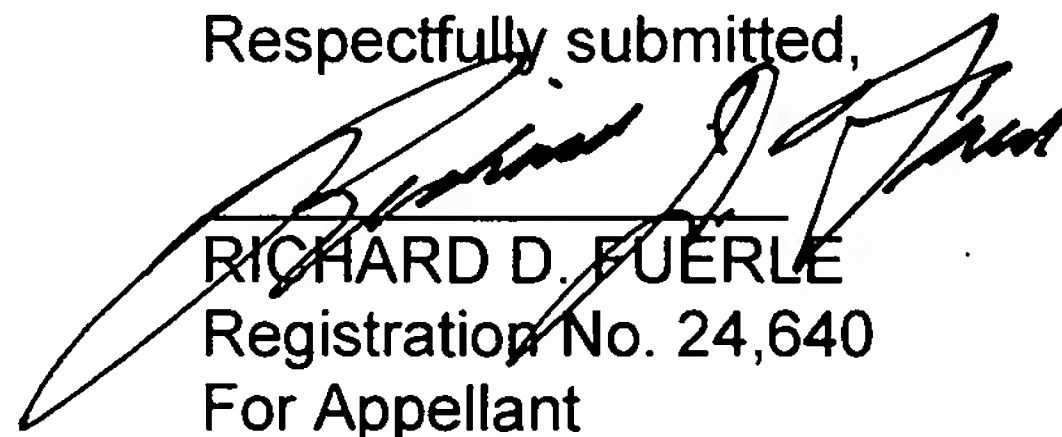
cable 140 attached at only one end of the chamber (see Figure 3). There is no suggestion in Mikulec '572 that there it might be advantageous to have a microswitch or a cable activated at both ends. Appellant has found that that having two cables activated can function as a fail-safe measure, in case one activation fails. Also, in some applications it is desirable to perform several functions when a fire is detected. For example, it may be desirable to both shut off the gas and sound an alarm. It may be easier to perform several functions by activating two microswitches or cables instead of just one, as shown in Milkulec '572.

Appellant notes that in his first Office Action, dated March 8, 2005, the Examiner did not reject Claim 4 over any prior art. For these reasons, Claim 4 does not stand or fall with the remaining claims.

II. Claims 10 to 13, 20 and 21 were rejected under 35 U.S.C. 103(a) as unpatentable over Mikulec '572. Appellant's comments as to the preceding rejection under 35 U.S.C. 102(b) apply as well to this rejection.

For these reasons, it is submitted that Appellants' invention is not obvious over the references cited. The Board is therefore requested to reverse the Examiner and allow Claims 1 to 21.

Respectfully submitted,



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(9) Claims Appendix

1. An actuator for releasing a fire extinguishing composition that is stored under pressure in the cylinder of a fire extinguisher, comprising an elongated body made of a single piece, said body having

(A) a longitudinal chamber that extends through said body, for holding a ram that moves therein and a spring for propelling said ram;

(B) a first transverse aperture that joins said chamber, for holding a trigger that releases said spring; and

(C) a second transverse aperture that joins said chamber, for holding a member that moves in response to movement of said ram, where movement of said member activates the release of said composition from said cylinder.

2. An actuator according to Claim 1 wherein a microswitch that is activated by said ram is attached at one end of said chamber.

3. An actuator according to Claim 1 wherein a cable that slides in a sheath and is activated by said ram is attached at one end of said chamber.

4. An actuator according to Claim 1 wherein a microswitch or a cable that is activated by said ram is attached at each end of said chamber.

5. An actuator according to Claim 4 wherein a fusible link is attached between said trigger and one end of said body.
6. An actuator according to Claim 1 wherein said member is a plunger that pierces a seal on said cylinder.
7. An actuator according to Claim 1 wherein said member is a rod that depresses a button on said cylinder.
8. An actuator according to Claim 1 wherein said longitudinal chamber, said first aperture, and said second aperture are circular in cross-section.
9. An actuator according to Claim 1 including a ram and a compressed spring within said longitudinal chamber, a trigger within said first aperture, and a member within said second aperture.
10. An actuator according to Claim 1 wherein said body is an extrusion.
11. An actuator according to Claim 10 wherein said extrusion is metal.
12. An actuator according to Claim 1 wherein said body is made by extruding metal to form a single extruded piece, then removing portions of said single extruded piece.

13. An actuator according to Claim 1 wherein said single piece is cast or molded.
14. A fire extinguisher activated by an actuator according to Claim 1.
15. A stove hood having a fire extinguisher according to Claim 14 mounted therein.
16. A method of making an actuator according to Claim 1 comprising extruding metal to form said single piece.
17. An actuator for releasing a pressurized fire extinguishing composition from the cylinder of a fire extinguisher comprising
 - (A) an elongated body having a longitudinal axis, made by removing material from a single piece, said body having
 - (1) a longitudinal chamber that extends through said body, for holding a ram that slides therein and a spring that propels said ram;
 - (2) a first transverse aperture that joins said longitudinal chamber at about a right angle, for holding a trigger that releases said spring; and
 - (3) a second transverse aperture that joins said longitudinal chamber at about a right angle, for holding a member moveable therein;

- (B) a member inside said second transverse aperture, movement of which activates the release of said fire extinguishing composition from said cylinder;
- (C) a ram inside said longitudinal chamber, where movement of said ram within said longitudinal chamber effects movement of said member within said second transverse aperture;
- (D) a compressed spring inside said longitudinal chamber between said ram and one end of said body, where said spring moves said ram when said spring is released; and
- (E) a trigger inside said first transverse aperture that releases said compressed spring.

18. A fire extinguisher activated by an actuator according to Claim 17.

19. A hood for a stove having a fire extinguisher according to Claim 18 mounted therein.

20. A fire extinguisher comprising

- (A) a cylinder containing a fire extinguishing composition that is under pressure;
- (B) an actuator for releasing said fire extinguishing composition from said cylinder, said actuator comprising

- (1) an elongated body having a longitudinal axis, made of a single piece of extruded metal, said body having
 - (a) a longitudinal chamber that extends through said body, for holding a ram that slides therein and a spring that propels said ram;
 - (b) a first transverse aperture that joins said longitudinal chamber at about 90°, for holding a trigger that releases said spring; and
 - (c) a second transverse aperture that joins said longitudinal chamber at about 90°, for holding a member that activates the release of said fire extinguishing composition from said cylinder;
 - (2) a member moveable inside said second transverse aperture;
 - (3) a ram inside said longitudinal chamber, where movement of said ram in said longitudinal chamber effects movement of said member in said second transverse aperture;
 - (4) a compressed spring inside said longitudinal chamber between said ram and one end of said body, where said spring moves said ram when said spring is released; and
 - (5) a trigger inside said first transverse aperture that releases said spring; and
- (C) a fusible link that releases said trigger at a predetermined temperature.

21. A hood for a stove having a fire extinguisher according to Claim 20 mounted therein.